WE CLAIM:

1. For a diplex communications network exchanging data packets with a plurality of subscriber stations, a communications interface for the subscriber stations comprising:

a communications port for connection to the network,

a modem having an address, coupled to the communications port,

a processor coupled to the modem, for processing data packets having identifier information relating the data packets to the address, the processor further comprising

a master communications interface mode in which the communications interface serves as a master communications interface for downloading data packets from the network and uploading data packets to the network, and

a slave communications interface mode in which the communications interface serves as a slave communications interface for downloading data packets from the network and uploading data packets to the master communications interface, and

a supplementary communications link, for communicating with one or more other communications interfaces,

wherein when a plurality of communications interfaces are connected in parallel one of the plurality of communications interfaces is in master mode and the others of the plurality of communications interfaces are in slave mode, the communications interfaces switching between master mode and slave mode responsive to a priority queue of upload demands from the plurality of communications interfaces.

2. The communications interface of claim 1 comprising a buffer for storing data during switching intervals.

3. The communications interface of claim 1 wherein the supplementary communications link comprises twisted pair telephone wiring within a premises.

4. The communications interface of claim 1 wherein the communications interface remains in master mode to relay to the network an upload demand from another communications interface which is below a threshold size or data rate.

5. The communications interface of claim 1 wherein the processor is remotely configurable.

6. The communications interface of claim 1 wherein the supplementary communications link communicates using Ethernet.

7. The communications interface of claim 6 wherein the supplementary communications link comprises an HPNA card.

8. The communications interface of claim 5 wherein the modem is frequency agile.

9. The communications interface of claim 1 wherein one or more of the others of the plurality of communications interfaces are fixed in slave mode.

10. The communications interface of claim 1 wherein when switching from master mode to slave mode the priority queue is transferred from the communications interface to another communications interface.

11. A diplex communications network exchanging data packets with a plurality of subscriber stations, comprising

a plurality of communications interfaces for the subscriber stations, at least some of the communications interfaces comprising:

a communications port for connection to the network,

a modem having an address, coupled to the communications port,

a processor coupled to the modem, for processing data packets having identifier information relating the data packets to the address, the processor further comprising

a master communications interface mode in which the communications interface serves as a master communications interface for downloading data packets from the network and uploading data packets to the network, and

a slave communications interface mode in which the communications interface serves as a slave communications interface for downloading data packets from the network and uploading data packets to the master communications interface, and

a supplementary communications link, for communicating with one or more other communications interfaces,

wherein when a plurality of communications interfaces are connected in parallel one of the plurality of communications interfaces is in master mode and the others of the plurality of communications interfaces are in slave mode, the communications interfaces switching between master mode and slave mode responsive to a priority queue of upload demands from the plurality of communications interfaces.

12. The communications network of claim 1 comprising a buffer for storing data during switching intervals.

13. The communications network of claim 11 wherein the supplementary communications link comprises twisted pair telephone wiring within a premises.

14. The communications network of claim 11 wherein a communications interface in master mode remains in master mode to relay to the network an upload demand from another communications interface which is below a threshold size or data rate.

15. The communications network of claim 11 wherein the processor is remotely configurable.

16. The communications network of claim 11 wherein the supplementary communications link communicates using Ethernet.

17. The communications network of claim 16 wherein the supplementary communications link comprises an HPNA card.

18. The communications interface of claim 15 wherein the modem is frequency agile.

19. The communications network of claim 11 wherein one or more of the others of the plurality of communications interfaces are fixed in slave mode.

20. The communications network of claim 11 wherein when switching from master mode to slave mode the priority queue is transferred from one communications interface to another communications interface.

21. A method of communicating over a diplex communications network exchanging data packets over a subscriber line with communications interfaces at a plurality of subscriber stations, comprising the steps of:

a. for each communications interface, assigning an address to a modem coupled to a communications port of each communications interface,

b. routing to each respective communications interface data packets downloaded from the network having identifier information relating the data packets to the address,

c. in a master communications interface mode, uploading data packets to the network over the subscriber line, and

d. in a slave communications interface mode, uploading data packets to a master communications interface over a supplementary communications link,

wherein when a plurality of communications interfaces are connected in parallel one of the plurality of communications interfaces is in master mode and the others of the plurality of communications interfaces are in slave mode, the communications interfaces switching between master mode and slave mode responsive to a priority queue of upload demands from the plurality of communications interfaces.

22. The method of claim 21 comprising the step of storing upload data during switching intervals.

23. The method of claim 21 wherein the supplementary communications link comprises twisted pair telephone wiring within a premises.

24. The method of claim 21 wherein a communications interface in master mode remains in master mode to relay to the network an upload demand from another communications interface which is below a threshold size or data rate.

25. The method of claim 21 including the step of remotely configuring one or more communications interfaces.

26. The method of claim 21 wherein the supplementary communications link communicates using Ethernet.

27. The method of claim 26 wherein the supplementary communications link comprises an HPNA card.

28. The method of claim 25 wherein the modem is frequency agile, and including the step of changing a frequency of the modem responsive to subscriber line conditions.

29. The method of claim 21 wherein one or more of the others of the plurality of communications interfaces are fixed in slave mode.

30. The method of claim 21 including the sub-step, when switching from master mode to slave mode, of transferring the priority queue from one communications interface to another communications interface.

31. For a diplex communications network exchanging data packets with a plurality of subscriber stations along subscriber transmission lines, a communications card comprising a plurality of modems, each modem for processing a carrier at a selected frequency separated from frequencies of other carriers generated by other modems in the communications card.

32. The communications card of claim 31 in which the frequency of each modem is dynamically variable.

33. The communications card of claim 32 comprising a processor for dynamically controlling the frequency of each modem based on conditions affecting its associated carrier.

34. The communications card of claim 33 wherein the signal processor analyzes momentary conditions of a subscriber transmission line and in response thereto assigns a frequency band for the modulated carrier associated with each modem.

35. The communications card of claim 34 wherein the momentary conditions of the subscriber transmission line are analyzed using bit error rate testing.

36. The communications card of claim 35 comprising a test signal generator for generating test signals at different frequencies, wherein a bit error rate tester disposed at the subscriber station detects a bit error rate of the test signals at various frequencies.

37. The communications card of claim 36 comprising a bit error rate tester for detecting a bit error rate of test signals generated at the subscriber stations.

38. The communications card of claim 32 wherein the modems are coupled to the same communications port, to thereby create a multi-channel subscriber line.

39. The communications card of claim 31 comprising guardband filters for maintaining a frequency separation between carriers.

40. The communications card of claim 33 comprising a routing device for coupling at least some of the modems to different communications ports.

41. The communications card of claim 40 in which the routing device comprises a plurality of notch filters for passing a carrier generated by one modem and blocking carriers generated by other modems.

42. The communications card of claim 41 comprising guardband filters for maintaining a frequency separation between carriers, wherein the guardband filters are frequency agile and are controlled by the processor to change frequencies as the frequencies of carriers generated by the modems are changed.

43. For a communications card comprising a plurality of modems in a diplex communications network exchanging data packets with a plurality of subscriber stations along subscriber transmission lines, each modem processing a carrier at a selected frequency separated from frequencies of other carriers generated by other modems in the communications card, a routing device for coupling at least some of the modems to different communications ports, the routing device comprising a plurality of notch filters for passing a carrier generated by one modem and blocking carriers generated by other modems, and a processor for setting a passband frequency of each filter corresponding to the frequency of a selected carrier for coupling to a particular port.

44. The routing device of claim 43 wherein the modems are frequency agile and the processor dynamically controls a frequency of the carrier generated by each modem.

45. The routing device of claim 44 wherein the processor dynamically changes a passband frequency of the notch filter corresponding to a selected frequency of the carrier generated by each modem for coupling each carrier to a particular port.